

# ABSTRACT

This invention relates to an apparatus for processing  
 an information signal etc. that, when converting, for example,  
 5 SD signal into HD signal, enables well to be obtained pixel  
 data of HD signal no matter whether the dynamic range DR is  
 large or small. DR in a class tap is detected. If  $DR \geq Th$ , items  
 of pixel data  $y_{1-a}-y_{4-a}$  calculated by using item of coefficient  
 data  $W_{i-a}$  corresponding to a class code Ca are estimated as items  
 10 of pixel data of HD signal. If  $DR < Th$ , an addition mean value  
 of items of pixel data  $y_{1-a}-y_{4-a}$ ,  $y_{1-b}-y_{4-b}$  calculated by using items  
 of coefficient data  $W_{i-a}$ ,  $W_{i-b}$  corresponding to class codes Ca,  
 Cb is estimated as item of the pixel data of HD signal. The  
 items of coefficient data  $W_{i-a}$ ,  $W_{i-b}$  are obtained by learning  
 15 between a student signal corresponding to the SD signal and  
 a teacher signal corresponding to the HD signal by using a  
 portion of the DR having a value thereof that is not less than  
 the threshold value Th. The code Ca is converted into the code  
 Cb so that the addition mean value can most approach a true  
 20 value of the pixel data of the HD signal.